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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q64784

Hayato YAMAUCHI

Appln. No.: 09/881,108

Group Art Unit: 3682

Confirmation No.: 7294

Examiner: William C. JOYCE

Filed: June 15, 2001

For: PINION SLIP-OFF PREVENTIVE STRUCTURE OF STARTING APPARATUS

REPLY BRIEF

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant respectfully submits this Reply Brief in response to the Examiner's Answer
dated July 21, 2004. Entry of this Reply Brief is respectfully requested.

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STATUS OF CLAIMS

As noted in Appellant's Brief on Appeal filed May 28, 2004, the present application was filed on June 15, 2001 with claims 1-5. A Reply Under 37 C.F.R. §1.111 was filed on February 7, 2003, without amending the original claims 1-5. A Response Under 37 C.F.R. §1.116 was filed on January 29, 2004, without amending the original claims 1-5. In the Advisory Action, mailed February 13, 2004, the Examiner has indicated that the Response filed January 29, 2004 has been considered. No amendments were made to the original claims 1-5.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner maintains the §102 rejections essentially for the same reasons set forth in the final Office Action mailed October 29, 2003. While Appellant believes that the Examiner did not present any new technical arguments in support of these prior art rejections, Appellant would like to address the following points noted in the Examiner's Answer.

1. The Examiner alleges that Schneider teaches the claim limitation of the stop engaging an end face of the pinion because "Schneider describes the operation of the starting device as 'the pinion gear (10) is pushed up to the catch ring (26) on the shaft drive (1) ...'" (see Examiner's Answer, *(11) Response to Argument*, ¶2).

2. The Examiner alleges that Lafitte teaches the claim limitation of the stop engaging an end face of the pinion because Lafitte discloses that, in "the starting stage, the helical grooves act so as to press against the cogs 6 and 7 the pinion gear 8 between the gland 1 and the stop 10 ..." (see Examiner's Answer, *(11) Response to Argument*, ¶4).

ARGUMENT

1. One the features of Appellant's pinion slip-off preventive structure is "a projected portion extending from an end face of said pinion shaft in an axial direction thereof and having a groove formed on a smooth surface thereof in a circumferential direction thereof; a snap ring fitted in said groove; and a stopper having an abutting surface in abutting engagement with an end face of said pinion and an engaging portion engaged with said snap ring" (see Appellant's claim 1). As noted in Appellant's Brief on Appeal, Schneider does not disclose or suggest a pinion slip-off preventive structure comprising such a unique **combination** of features.

Appellant's independent claim 1 further provides a pinion slip-off preventive structure for a starting apparatus in which "said pinion [is] splined to a spline portion formed on said pinion shaft" (see Appellant's claim 1).

As explained in great detail in Appellant's specification, in prior art structures (see Appellant's Figs. 6 and 7), the snap ring 17 is fitted in the groove 16 formed on the **spline portion** 8, and the elastic load applied to the snap ring 17 from the elastic member 10 is supported by the **spline portion** 8, as illustrated in Fig. 7. Therefore, there arises a problem that a pressure-receiving area of the snap ring 17 becomes small, and hence the snap ring 17 is subjected to an accordingly increased bearing load and is liable to be worn out and damaged, thus giving rise to fear that the pinion 9 may slip off the pinion shaft 7. (See Appellant's specification, page 3.)

On the other hand, in the pinion slip-off preventive structure, as claimed in Appellant's claim 1, and as illustrated in a non-limiting exemplary implementation shown in Appellant's Figs. 1 and 2, the snap ring 17 is arranged in the groove 51 formed on the smooth surface of the projected portion 52, while the pinion 9 remains splined to a spline portion 8 of the pinion shaft 7. Therefore, the pressure-receiving area of the snap ring 17 is increased, as compared with the case where the elastic load of the elastic member 10 applied to the snap ring 17 in the prior art apparatus is supported by the spline portion 8. As a consequence, the load per unit area applied to the snap ring 17 is accordingly reduced, making the snap ring 17 less prone to being worn out and damaged. (See Appellant's specification, page 7.)

Even if, assuming *arguendo*, in Schneider, at some point of operation, its pinion gear (10) is pushed up to its catch ring (26) on its shaft drive (1), nowhere does Schneider disclose, or even remotely suggest that, its snap ring¹ is formed on the smooth surface of the projected portion of the shaft drive (1) while its pinion 10 remains splined with a spline portion of its drive shaft (1).

Therefore, Appellant's claim 1, and its dependent claims 2-4, are not anticipated by (i.e., are not readable on) Schneider.

2. As noted above, Appellant's invention provides a pinion slip-off preventive structure comprising a unique combination of features, including, *inter alia*, a projected portion extending

¹The snap ring (as alleged by the Examiner) is shown below element 26 and (as further alleged by the Examiner) is fitted in a groove formed on the projected portion of the shaft drive (1).

from an end face of a pinion shaft (the pinion being splined to a spline portion formed on the pinion shaft) in an axial direction thereof and having a groove formed on a smooth surface thereof in a circumferential direction thereof, a snap ring fitted in the groove, and a stopper having an abutting surface in abutting engagement with an end face of the pinion and an engaging portion engaged with the snap ring.

Even if, assuming *arguendo*, during Lafitte's "starting stage", its pinion gear 8 is pushed up to abut against its stop 10, nowhere does Lafitte disclose, or even remotely suggest, that its pinion gear 8 remains splined with a spline portion of its shaft 3, while its pinion gear 8 is pushed up against its stop 10. In fact, Lafitte discloses quite the opposite: "[t]he pinion 8 is provided with a bush-bearing, which may slide and rotate on the smooth portion of shaft 3" (see *Id.*, col. 2, lines 6-8).

Therefore, Appellant's claim 1, and its dependent claims 3-5, are not anticipated by (i.e., are not readable on) Lafitte.

CONCLUSION

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,



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Date: September 21, 2004